- A 28-item self-report questionnaire designed to assess four aspects of distress (McDowell and Newell, 1996)

    - Depression
    - Anxiety
    - Social impairment
    - Hypochondriasis

- Respondents rate each question using options provided

    - "Better than usual"
    - "Same as usual"
    - "Worse than usual"
    - "Much worse than usual"

- Choice of scoring method may impact diagnosis (Richard et al, 2004, n = 1145, general medicine patients)

    - GHQ (Acute) scoring methods (traditional method); scores of:
        - 0 for choices 1 and 2
        - 1 for choices 3 and 4
    - cGHQ (Chronic) scoring has been suggested for patients with persistent complaints
        - For the 18 negatively valanced items:
            - 0 for choice 1 and score of 1 for choices 2, 3, and 4
        - 7 positively valanced items:
            - 0 for choices 1 and 2
            - 1 for choices 3 and 4

- Interpreting Results:

    - GHQ method; average score = 6.28 (Median = 4; SD = 6.38)
    - cGHQ method; average score = 11.45 (Median = 11; SD = 6.73)

- Prior research has not found a significant difference between gender, age, language or educational level (Goldberg et al, 1997)

What is the GHQ used for?

The GHQ is used to detect psychiatric disorder in the general population and within community or non-psychiatric clinical settings such as primary care or general medical out-patients. It assesses the respondent's current state and asks if that differs from his or her usual state. It is therefore sensitive to short-term psychiatric disorders but not to long-standing attributes of the respondent.

By whom is GHQ used?

The GHQ is very widely used by researchers in various fields (occupational health, medicine, psychology) and clinicians who wish to screen individuals for psychiatric disorder.

What are the unique technical features of the GHQ-12?

This version of the GHQ is very quick to administer and score as it contains only 12 questions. It has comparable psychometric properties to the longer versions even though it only takes around two minutes to complete. Given its speed of administration, it is often used in research studies where it is impractical to administer a longer form.

The GHQ-12 was prepared by removing the items endorsed by 'physically ill' respondents from the GHQ-60. Items were then divided into those in which agreement indicated either health or illness. Within each group, items were selected which had the highest slopes in the original item analysis. For further information on the design of the GHQ-12, please refer to the User's Guide (1988), p.21. The GHQ-12 yields only an overall total score.

What are the unique technical features of the GHQ-28?

It is often of more interest to be able to examine a profile of scores rather than a single score, making this version of the GHQ particularly useful. It contains 28 items that, through factor analysis, have been divided into four sub-scales. The GHQ-28 is the most well-known and popular version of the GHQ. For further information on the design of the GHQ-28, please refer to the User's Guide (1988), p.37.

This 'scaled' version of the GHQ has been developed on the basis of the results of principal components analysis. The four sub-scales, each containing seven items, are as follows:

- A – somatic symptoms (items 1-7)
- B – anxiety/insomnia (items 8-14)
- C – social dysfunction (items 15-21)
- D – severe depression (items 22-28)

There are no thresholds for individual sub-scales. Individual sub-scales are used for providing individual diagnostic or profile information. For identifying caseness with GHQ-28, the total of the sub-scales is used.

An important paper on the GHQ-28 is that which reports the WHO study of mental illness in general health care. Goldberg, D.P. et al (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care.
Psychological Medicine, 27, 191-197.

The GHQ-28 has been advocated by Easton & Turner for use in trauma research and is included in the 1998 GL Assessment 'Measures in Post-traumatic Stress Disorder: A Practitioner's Guide' mini-portfolio edited by Stuart Turner and Deborah Lee.

What are the unique technical features of the GHQ-30?

This version contains 30 items and is excellent as a quick screener to help detect caseness. It produces an overall score that can be compared with a prescribed cut-off score.

The GHQ-30 is the most widely validated version and 29 validity studies are outlined in the User's Guide. It was developed from the GHQ-60 and involved removing all questions related to somatic symptoms. For further information on the design of the GHQ-30, please refer to the User's Guide (1988), p.21. The fact that this version is so well-validated is a good reason for choosing to use the GHQ-30.

The GHQ-30 yields only an overall total score.

What are the unique technical features of the GHQ-60?

This version contains 60 items and is ideal if it is to be used to identify potential cases for more intensive examination. However, there is undoubtedly some redundancy in the GHQ-60 and this must explain how versions as short as the GHQ-12 still do a good job of discriminating between cases and non-cases. In places where time is strictly limited or respondents have poor reading skills and the questions must be read out to them, there are obvious advantages in using a shorter version of the questionnaire. The GHQ-60 produces an overall score that can be compared with a prescribed cut-off score. For further information on the development and design of the GHQ-60, please refer to: Goldberg, D. (1972) The Detection of Psychiatric Illness by Questionnaire. Maudsley Monograph No. 21, Oxford University Press.

How should I choose between the GHQ-60 and the GHQ-30?

The only advantage of using the GHQ-30 over the GHQ-60 is that it can be completed more quickly (3-4 minutes compared with 6-8 minutes). Patients in consultation settings often wait as long as 10 minutes to see their doctor, hence the longer questionnaire seems quite reasonable. If the intention is for GHQ use within a non-consulting setting, then the GHQ-60 is preferable, since the hits-positive rate is much better in settings with low prevalence.

How do I obtain permission to use the GHQ in research studies?

We will consider requests for the GHQ to be used in an alternative format (eg: included within a test booklet for research purposes). In such cases a GHQ user guide should be purchased.

You will first need to contact us with details of what you wish to do via: permissions@gl-assessment.co.uk.

Information Required:

- Brief details of the project, for example, what is the study measuring?
- How many administrations will you be carrying out? For example, if you will be administering the GHQ-28 to 100 people twice, you will be doing 200 administrations.
- Will you be using the measure as it stands or will you be using the whole scale or some of the items within a larger questionnaire?

- Are you a student or a clinical practitioner? If you are student please provide details of your supervisor.

Illegal use of the GHQ

This is unfair to the authors and future researchers. The conditions set out for permission to use the GHQ as part of your own research have been put together to protect the use of the questionnaire. Photocopying a record form without abiding by the conditions outlined above is regarded as theft and is a criminal offence. Part of the payment received from permissions is paid as a royalty to the Institute of Psychiatry to fund research.

Are there any translations of the GHQ?

A number of translations are available. However, these have not been validated by GL Assessment. The MAPI Research Trust distributes translated versions on behalf of our Company. You will first need to obtain permission to use the scale through GL Assessment via permissions@gl-assessment.co.uk. Translated versions are available in a range of languages including Czech, Afrikaans and US-Spanish.

Then you will need to contact MAPI, informing them of the translations you require via: trust@mapi.fr.

Please see a recent article, and paper, published by the British Psychology Society: http://www.bps.org.uk/media-centre/press-releases/releases$/division-of-educational-and-child-psychology/children-with-delayed-language-skills$.cfm.

Locke, A, Ginsbourg, J and Peers, I. (2002). Development and Disadvantage: implications for the early years and beyond. International. J. of Language & Communication Disorders, 37(1), 3-15

How is the GHQ scored?

All items have a 4 point scoring system that ranges from a 'better/healthier than normal' option, through a 'same as usual' and a 'worse/more than usual' to a 'much worse/more than usual' option. The exact wording will depend upon the particular nature of the item.

There are four possible methods of scoring the questionnaire:

- GHQ scoring (0-0-1-1). This method is advocated by the test author.
- Likert scoring (0-1-2-3)
- Modified Likert scoring (0-0-1-2)
- C-GHQ scoring (0-0-1-1) for positive items, where agreement indicates health, and 0-1-1-1 for negative items, where agreement indicates illness).

For both GHQ and Likert scoring, the wording of the items mean that they can all be scored in the same direction (no need to reverse score), so the higher the score, the more severe the

condition. The Likert scoring method will produce a wider and smoother score distribution if a researcher wishes to assess severity and the C-GHQ method is more normally distributed than the GHQ scoring method.

The author has stated that '… modified Likert is inferior to simple Likert and may therefore be discarded'. C-GHQ scoring is a relatively specialised method and is useful only when it is important not to miss cases with long-standing disorders.

GHQ-12/30/60 all yield only an overall total score. The GHQ-28 is a scaled version, yielding four sub-scores, each based on seven items and a total score.

Can Likert scoring be converted to GHQ scoring?

This is not possible. The best advice is to score using the GHQ method and to use threshold scores that have been computed scoring that method. It would be useful to refer to the following reference: Goldberg, D.P. et al

The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psychological Medicine, 1997, 27, 191-197.

What are the thresholds for GHQ?

Thresholds are only relevant for screening use of the GHQ, i.e. for identifying 'caseness'. For this use, the GHQ scoring is advocated by the test author. For GHQ-30 and GHQ-60, the user will need to determine their required threshold value – we have no data on which to base a default threshold for such scoring.

In general, it is best if the user specifies their required threshold value, based on past clinical use or research evidence relevant to their assessment circumstances. The following gives some threshold values that can be entered as default options. These have been derived from information in the original GHQ Manual, the User's Guide and the following paper: Goldberg, D.P. et al (1997).

The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psychological Medicine, 27, 191-197.

N.B. For people who are physically ill, a higher threshold than the default one will probably be needed for optimal discrimination between cases and non-cases.

Suggested Default Thresholds		
Suggested default threshold using:		
GHQ	**GHQ Scoring**	**Likert**
GHQ12	1/2 (max score 12)	11/12 (max score 36)
GHQ28	4/5* (max score 28)	23/24 (max score 84)
GHQ30	4/5 (max score 30)	--- (max score 90)

GHQ60	11/12 (max score 60)	--- (max score 180)

* advocated in 1978 GHQ Manual; 1997 WHO study (see reference above) had an average threshold, across all centres and languages, of 5/6 and reports a threshold of 6/7 for a Manchester, UK sample. Turner & Lee advocate a cut-off of 12/13 as almost always indicating a positive psychiatric condition in the PTSD context (see Easton, J.A. and Turner, S.W. (1991) Detention of British citizens as hostages in the Gulf – health, psychological, and family consequences. British Medical Journal, 303, 1231-1234).

How do I score missing data in the GHQ?

The standard procedure is to count omitted items as low scores. This applies to all four versions of the GHQ.

Can the GHQ be used with children and adolescents?

None of the versions of the GHQ are recommended for use with children. However, the User Guide (p63) notes that several researchers appear to have used it successfully with adolescents.

Professor Sir David Goldberg

Professor Sir David Goldberg studied medicine at Oxford University then psychiatry at Maudsley. In 1972 he was appointed Professor and Head of Department at Manchester University. He returned to the Maudsley in 1993 as Professor of Psychiatry and Director of Research and Development, and was knighted in 1997. He became a Professor Emeritus of King's College London in 2000.

The Scaled General Health Questionnaire-28 (GHQ-28)

- The GHQ is used for the detection of psychiatric distress related to general medical illness (Lykouras et al. 1998).
- Respondents indicate if their current "state" differs from his or her usual state - thereby assessing change in characteristics and not lifelong personality characteristics.

Number of items: 28

Procedure/Administration: A self-administered questionnaire in which the patients base their responses on their health state over the past two weeks.

How scored: Calculation of total scores (1 point per question)

Interpretability: Scores range from 0 to 28. Higher scores indicate a greater probability of a psychiatric distress. Total scores that exceed 4 out of 28 suggest probable distress (Chung et al. 2006).

Acceptability: Only one study has assessed the construct validity of the GHQ-28 among SCI populations (Rush et al. 2008).

Languages: N/a

Usability: The GHQ-28 is appropriate for individuals who are at least 11 years of age

Time to administer: The scale takes less than 15 minutes to administer and score (appears easy to complete).

Time to score: The scale takes less than 15 minutes to administer and score.

Training required: No special training is required.

Availability: N/a

Equipment required: N/a

Summary:

- The GHQ-28's subscales represent dimensions of symptomatology and not distinct diagnoses.
- As the scales are not independent of each other, the total score has better utility to indicate general psychological disorder than the individual scores do to screen for specific psychological disorders.

Psychometric Summary

Reliability	Validity	Responsiveness	
Results	Results	Results	Floor/ceiling
N/a	Construct: Green light SS: Yellow light	N/a	N/a

Note: TR= Test re-test; IC= Internal Consistency; Inter-O= Inter-observer; Intra-O= Intra-observer; SS= Sensitivity/Specificity; N/a= No information.

Red light= A single study involving SCI subjects which has less than adequate findings of reliability, validity, and/or responsiveness.

Yellow light= A single study involving subjects with SCI which has adequate to excellent findings of reliability, validity, and/or responsiveness.

Green light= At least 2 studies involving subjects with SCI which have adequate to excellent findings of reliability, validity, and/or responsiveness.

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- ## ABSTRACT
- ## Aims and Method
- Psychiatric morbidity is common in neuropsychiatric patients. The aim of the study was to detect psychiatric morbidity and psychiatric diagnoses in 3 groups of neuropsychiatric patients; inpatients, outpatients and ward referrals from neurology and neurosurgical wards.
- 54 inpatients at a specialist neuropsychiatry tertiary referral centre (The Burden Centre) were consecutively assessed using self report and observer rated questionnaires and interviews. 40 consecutive outpatients at the Burden Centre and 18 consecutive ward referrals from neurology and neurosurgical wards were assessed in the same manner
- ## Results:
- The most common psychiatric diagnoses detected were affective disorders (22-30%), neurotic disorders (10-18%), somatoform and dissociative disorders (18-36%). In general the HADS and the GHQ-28 were useful screening tools while the SCL-90-R, HDRS and MADRS were more specific particularly for detecting depression.
- ## Clinical Implications
- Rating scales are useful in screening for psychiatric morbidity and psychiatric diagnoses in neuropsychiatric patients.

- ## Introduction
- Neuropsychiatry can be defined as the assessment and treatment of patients with psychiatric symptoms that are associated with definite brain dysfunction or lesions (Yudofsky and Hales 2002). The latter includes conditions such as: traumatic brain injury, cerebral vascular disease, seizure disorders, neurodegenerative diseases, brain tumours, infectious and inflammatory diseases of the central nervous system, alcohol and other substance-induced organic mental disorders and developmental disorders. Psychiatric morbidity is common in neuropsychiatric patients (Trimble 1991). For example in specialty referral clinics for epilepsy, the prevalence is thought to be 25% to 50% (Stevens 1988). Detecting and treating psychiatric morbidity can improve prognosis in both epilepsy and non-epileptic seizures. (Hermann et al. 2000, Muller 2001, Wolf 1997). The aim of the study was to detect psychiatric morbidity and psychiatric diagnoses in 3 groups of neuropsychiatric patients; inpatients, outpatients and ward referrals from neurology and neurosurgical wards.
- ## Method

- 54 inpatients at a specialist neuropsychiatry tertiary referral centre (The Burden Centre) were consecutively assessed using self report and observer rated questionnaires and interviews. These included the HADS (Hospital Anxiety and Depression Scale (Zigmond and Snaith 1983)), GHQ-28 (General Health Questionnaire 28 (Goldberg and Hillier 1979)), SCL-90-R (Symptom Checklist-90-Revised (Derogatis 1994)), HDRS (Hamilton Depression Rating Scale (Hamilton 1967)), MADRS (Montgomery and Asberg Rating Scale (Montgomery and Asberg 1979)) and SCAN 2.1 (Schedules for Clinical Assessment in Neuropsychiatry (Wing et al. 1990)). There was a 94% response rate. 40 consecutive outpatients at the Burden Centre and 18 consecutive ward referrals from neurology and neurosurgical wards were assessed in the same manner. Response rates of 95 and 94% were achieved respectively.
- **HADS (Hospital Anxiety and Depression Scale)**
- The Hospital Anxiety and Depression Scale (HADS) was originally developed for use in hospital settings, as the name suggests. It was designed as a self-completed questionnaire to assess patients' anxiety and depression whilst in in-patient care according to two sub-scales. The Anxiety and Depression scales both comprise 7 questions rated from a score of 0 to 3 depending on the severity of the problem described in each question. The two sub-scales can also be aggregated to provide an overall anxiety and depression score. The anxiety and depression scores are categorised as below:
-
- Aggregate Score:-
  Interpretation
  0-7 Normal
  8-10 Mild
  11-14 Moderate
  15-21 Severe
- **GHQ-28 (General Health Questionnaire 28)**
- The General Health Questionnaire (GHQ) is a self-administered screening test, designed to identify short-term changes in mental health (depression, anxiety, social dysfunction and somatic symptoms). It is a pure state measure, responding to how much a subject feels that their present state "over the past few weeks" is unlike their usual state. It does not make clinical diagnoses and should not be used to measure long-standing attributes. The GHQ focuses on the client's ability to carry out "normal" functions and the appearance of any new disturbing phenomena. Designed for use by doctors, psychiatrists and researchers, the GHQ is ideal for use in community and non-psychiatric settings and has four different versions. The GHQ-28 is the most well-known and popular version of the GHQ. Using the Likert scoring (i.e. 0,0,1,1) a cut off score of 4/5 is most effective at separating cases from non cases.

- **SCL-90-R (Symptom Checklist 90 Revised)**
- The SCL-90-R is a 90-item self-report symptom inventory designed to reflect the psychological symptom patterns of community, medical and psychiatric respondents. Each item is rated on a 5 point scale of distress. The SCL-90-R has high validity and reliability in neuropsychiatric population. It has 9 primary symptom dimensions including: Somatisation, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychotism. Caseness is

defined by an area t score on the GSI (General severity scale) greater than 62 or 2 area t scores in 2 dimensions greater than 62. An area t score of 63 corresponds to the 90th centile of the appropriate normative population. There are 4 norm groups for each sex: inpatients, outpatients, non patients and adolescents.

- **HDRS (Hamilton Depression Rating Scale)**
- The original scale is a 17-item scale which is designed to be used by a skilled psychiatrist, as the completion requires a considerable exercise of clinical skill. The information required for the completion of the scale does not necessarily have to come from an interview and could, indeed, be extracted from many different sources plus a clinical interview. The state of the patient over the previous few days is taken into account, with the recommendation that it is only to be used with patients who already have a diagnosis of depressive illness.

  The Hamilton scale has often been reported to be the most sensitive scale for measuring response to treatment and is probably the most widely used scale in research on depression for describing levels of severity in different groups, to ensure an adequate matching or to measure improvements in trials on treatment. The scale has high validity against global judgement and high reliability both with correlations of approximately 0.90. The scale can not be used either for diagnostic purposes or to differentiate types of depression.
-
- Scoring:
  0-7 None / Minimal depression
  8-17 Mild
  18-25 Moderate
  26+ Severe
- **MADRS (Montgomery and Asberg Rating Scale)**
- This scale is the depression part of the CPRS (Comprehensive Psychiatric Rating Scale (Asberg et al. 1978)). The items of this scale were included because of the frequency of occurrence, sensitivity to treatment effect, correlation to outcome and inter-rater reliability. Scoring is based on a flexible interview on a six-point rating scale. The authors suggest the following as an interpretation of scores:
-
- 0-6 Normal/recovered
  7-19 Mild depression
  20-34 Moderate depression
  35-60 severe depression

- **Schedules for Clinical Assessment in Neuropsychiatry (SCAN 2.1)**
- SCAN 2.1 is a structured clinical interview schedule with semi-standardized probes aimed at assessing, measuring and classifying the psychopathology and behaviour associated with the major psychiatric disorders of adult life. Administration time varies between 60 and 90 minutes. Diagnoses can be classified using both ICD-10 and DSM-Iv criteria.
- **Results:**

- Table 1 shows results of psychopathology scores in each patient group. Only patients scoring above a defined threshold were included. Table 2 shows ICD-10 psychiatric diagnoses from SCAN 2.1. Some patients had more than one diagnosis. The most common psychiatric diagnoses detected were affective disorders (22-30%), neurotic disorders (10-18%), somatoform and dissociative disorders (18-36%). In general the HADS and the GHQ-28 were useful screening tools while the SCL-90-R, HDRS and MADRS were more specific particularly for detecting depression. Of note 42% of inpatients with a diagnosis of epilepsy had at least one psychiatric diagnosis in addition.
- **TABLE 1: Results from rating scales**
-

Number of Patients	HADS > 10	GHQ-28 > 4	SCL-90-R t score > 62	HDRS > 17	MADRS > 19
Inpatients	31	34	25	17	16
n=54	58%	63%	47%	32%	29%
Outpatients	15	16	16	10	12
n=40	38%	40%	40%	25%	23%
Ward referrals	10	12	11	6	6
n=18	56%	67%	61%	33%	33%

-
- **TABLE 2: Psychiatric diagnoses (ICD-10 Criteria from SCAN 2.1)**
-

	Epilepsy (ILAE classification)	Dementia	Substance Abuse	Alcohol Abuse	Psychotic Disorder	Affective Disorder (BPAD RDD or Single episode)	Neurotic Disorder	Somatoform and Dissociative Disorder	P.D.	L.D
In-patients	39	1	0	10	1	16	10	19	1	10

54	72%	2%	0	18%	2%	30%	18%	36%	2%	18%
Out patients	22	1	2	6	1	9	4	7	1	3
40	54%	2.5%	5%	16%	2.5%	22%	10%	18%	2.5%	8%
Ward Refer-rals	9	1	0	0	1	6	2	6	0	0
18	50%	5.5%	0	0	5.5%	33%	10%	33%	0	0

- ## Discussion
- In general the HADS and the GHQ-28 were useful screening tools while the SCL-90-R, HDRS and MADRS were more specific particularly for depression. There are a number of limitations to this prospective study. The samples (inpatients, outpatients, ward referrals) are independent and the numbers are relatively small. However the results are not intended to provide evidence of statistical significance, rather to highlight methods of improving detection rates of psychiatric morbidity.

- ## Conclusion
- Rating scales are useful in screening for psychiatric morbidity and psychiatric diagnoses in neuropsychiatric patients.
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